

IN THE UNITED STATES PATENT AND  
TRADEMARK OFFICE

In Re the Application of: George Seidel, Lisa Herickhoff, John Schenk

Serial Number:

Filed:

For: System for Improving Yield of Sexed Embryos in Mammals

Group Art Unit:

Examiner:

Assignee:

**DECLARATION FOR PATENT APPLICATION**

We, George Seidel, Lisa Herickhoff, and John Schenk, hereby declare:

We are citizens of the United States of America and that our residence and mailing addresses are as follows:

George Seidel: 3101 Arrowhead Road, LaPorte, CO 80535

Lisa Herickhoff: 5123 E. County Road 52, Fort Collins, CO 80524

John Schenk: 1906 Constitution, Fort Collins, CO 80526

We believe that we are the original, first, and joint inventors of the subject matter which is claimed and for which a patent is sought on the invention entitled "System for Improving Yield of Sexed Embryos in Mammals" the specification of which is enclosed herewith.

We hereby state that we have reviewed and understand the contents of the above-identified specification, including the claims.

We acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, Section 1.56(a).

We hereby declare that all statements made herein of our own knowledge are true and that

all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Date: January 29, 1998

George Seidel  
George Seidel

Date: 29 Jan 1998

Lisa Herickhoff  
Lisa Herickhoff

Date: 29 Jan 98

John Schenk  
John Schenk

UNITED STATES OF AMERICA )  
STATE OF Colorado )ss.  
COUNTY OF Fremont )

SUBSCRIBED AND SWORN to before me in the County of Fremont, State of Colorado, United States of America, by George Seidel, this 26 day of August, 1998.

WITNESS my hand and official seal pursuant to the authority vested in me as a Notary Public by the State of Colorado.

Barbara G. Brown  
Notary Public  
My Commission Expires: 7-6-99

UNITED STATES OF AMERICA )  
STATE OF Colorado )ss.  
COUNTY OF Fremont )

SUBSCRIBED AND SWORN to before me in the County of Fremont, State of Colorado, United States of America, by Lisa Herickhoff, this 26 day of August, 1998.

WITNESS my hand and official seal pursuant to the authority vested in me as a Notary Public by the State of Colorado.

Barbara G. Brown  
Notary Public  
My Commission Expires: 7-6-99

UNITED STATES OF AMERICA )  
STATE OF Colorado )ss.  
COUNTY OF Fremont )

SUBSCRIBED AND SWORN to before me in the County of Fremont, State of Colorado, United States of America, by John Schenk, this 26 day of August, 1998.

WITNESS my hand and official seal pursuant to the authority vested in me as a Notary Public by the State of Colorado.

Barbara G. Brown  
Notary Public  
My Commission Expires: 7-6-99

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IN THE UNITED STATES PATENT AND  
TRADEMARK OFFICE  
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In Re the Application of: George Seidel, Lisa Herickhoff, John Schenk

Serial Number: New: \_\_\_\_\_ (Parent: 09/448,643)

Filed: New: \_\_\_\_\_ (Parent: 11/24/1999)

New Title: Multiple Sexed Embryo Production System for Mammals Using Low Numbers of Spermatozoa

Parent Title: Multiple Sexed Embryo Production System for Mammals

Group Art Unit: New: \_\_\_\_\_ (Parent: 1655)

Examiner: New: \_\_\_\_\_ (Parent: Carla J. Myers)

Assignee: XY, Inc. and Colorado State University through its agent Colorado State University Research Foundation

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DECLARATION FOR PATENT APPLICATION

This Declaration is made by George Seidel, Lisa Herickhoff, and John Schenk.

We, George Seidel, Lisa Herickhoff, and John Schenk, hereby declare:

We are citizens of the United States of America and that our residence and mailing addresses are as follows:

George Seidel: 3101 Arrowhead Road, La Porte, CO 80535  
Lisa Herickhoff: 7400 South Lemay, Fort Collins, CO 80521  
John Schenk: 1906 Constitution, Fort Collins, CO 80526

We believe that we are the original, first, and joint inventors of the subject matter which is claimed and for which a patent is sought on the invention entitled an "Multiple Sexed Embryo Production System for Mammals Using Low Numbers of Spermatozoa" and:

- as originally entitled " Multiple Sexed Embryo Production System for Mammals" the specification of which was filed as United States Application Number 09/448,643, filed November 24, 1999 and issued as Patent No. \_\_\_\_\_.
- as originally entitled "System for Improving Yield of Sexed Embryos in Mammals" the specification of which was filed as United States Application Number 09/015,454, filed January 9, 1998 and issued as Patent No. 6,071,689;
- as originally entitled "Sheath Fluids and Collection Systems for Sex-Specific Cytometer Sorting of Sperm" the specification of which was filed as United States Application No. 09/001,394, filed December 31, 1997, and issued as United States Patent No. 6,149,867, each hereby incorporated by reference

the specification(s) of which have been provided to us at or prior to the time of signing this declaration, and of which we hereby claim the benefit of and priority pursuant to 35 U.S.C §§119, 120, or 365; there are no foreign applications having a filing date before that of the application(s) on which priority is claimed; and, if applicable, we have identified in the request of this application, in compliance with PCT Rule 4.10, any claim to foreign priority and we have identified above by application number, country or Member of the World Trade Organization, day, month and year of filing, any application for a patent or inventor's certificate filed in a country other than the United States of America, including any PCT international application designating at least one country other than the United States of America, having a filing date before that of the application on which foreign priority is claimed.

We hereby declare that the above specification(s) are intended to include disclosure or claims directed to, individually or in combination: embodiments of the invention which may encompass a device, apparatus, method, process, or business method; embodiments of the invention which may encompass permutations or combinations of any aspects of the invention; any aspect of the invention conceived or developed as separate inventions; and any aspect of the invention independent of any initial context considered as preferred embodiments. We also authorize and support this application for patent protection in the United States, and for similar protection in foreign countries, each to be sought to the extent or breadth any owner desires or deems appropriate. We acknowledge that each of the attorneys and the firm filing this application is/are attorneys for the assignee, XY, Inc., only.

We hereby state that we have reviewed and understand the contents of the specification entitled "Multiple Sexed Embryo Production System for Mammals Using Low Numbers of Spermatozoa", including any claims.

We acknowledge the duty to disclose information which is material to the examination of this

application in accordance with Title 37, Code of Federal Regulations, Section 1.56(a).

We hereby declare that all statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

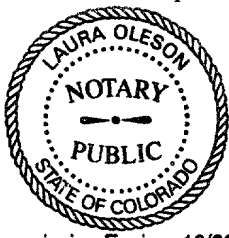
Date: Feb 12, 2002

George Seidel  
George Seidel

UNITED STATES OF AMERICA )  
STATE OF Colorado )ss.  
COUNTY OF Larimer )

SUBSCRIBED AND SWORN to before me in the County of Larimer, State of Colorado, United States of America, by George Seidel, this 12<sup>th</sup> day of February, 2002.

WITNESS my hand and official seal pursuant to the authority vested in me as a Notary Public by the State of Colorado.



Laura Oleson  
Notary Public  
My Commission Expires: 10/23/2005

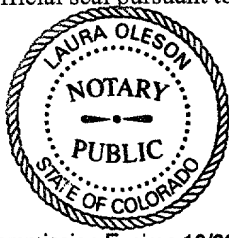
Date: 2/19/02 My Commission Expires 10/23/2005

Lisa Herickhoff  
Lisa Herickhoff

UNITED STATES OF AMERICA )  
STATE OF Colorado )ss.  
COUNTY OF Larimer )

SUBSCRIBED AND SWORN to before me in the County of Larimer, State of Colorado, United States of America, by Lisa Herickhoff, this 19<sup>th</sup> day of February, 2002.

WITNESS my hand and official seal pursuant to the authority vested in me as a Notary Public by the State of Colorado.



Laura Oleson  
Notary Public  
My Commission Expires: 10/23/2005

My Commission Expires 10/23/2005

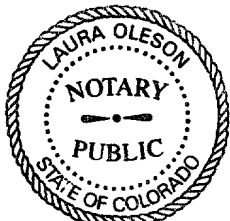
Date: 14 Feb 02

John Schenk  
John Schenk

UNITED STATES OF AMERICA )  
STATE OF Colorado )ss.  
COUNTY OF Larimer )

SUBSCRIBED AND SWORN to before me in the County of Larimer, State of Colorado, United States of America, by John Schenk, this 14<sup>th</sup> day of February, 2002.

WITNESS my hand and official seal pursuant to the authority vested in me as a Notary Public by the State of Colorado.



Laura Oleson  
Notary Public  
My Commission Expires: 10/23/2005

My Commission Expires 10/23/2005

**IN THE UNITED STATES PATENT AND  
TRADEMARK OFFICE**

In Re the Application of:     George Seidel, Lisa Herickhoff, John Schenk

Serial Number:                     09/015,454

Filed:                                 January 29, 1998

For:                                     System for Improving Yield of Sexed Embryos in Mammals

Group Art Unit:                     1641

Examiner:                             Carla Myers

Assignee:                             Colorado State University through its agent  
   Colorado State University Research Foundation

**ASSIGNMENT OF PATENT RIGHTS**

THIS ASSIGNMENT document is executed the 27<sup>th</sup> day of January, 1998, between and among Colorado State University Research Foundation, a non-profit Colorado Corporation, whose business address is P.O. Box 483, Fort Collins, CO 80523, (hereinafter called "ASSIGNEE"), and George Seidel whose address is 3101 Arrowhead Road, LaPorte, CO 80535 (the "ASSIGNOR").

WHEREAS, ASSIGNOR is currently conducting efforts which are currently incorporated in the technology addressed by the above referenced patent application entitled "System for Improving Yield of Sexed Embryos in Mammals" (the INVENTION);

WHEREAS, the ASSIGNOR has been and is under a continuing obligation to assign all rights related to the INVENTION to Colorado State University Research Foundation; and

WHEREAS, ASSIGNOR has agreed that ASSIGNEE shall own all patent rights to the above referenced invention;

NOW, THEREFORE, for and in consideration of the payment of ten dollars (\$10.00), the receipt and sufficiency of which are hereby acknowledged, the parties hereto agree as follows:

1. The Assignor warrants that: he is the originator of all lawful rights, title, and interest to the Invention; these rights arose as a result of efforts at Colorado State University; he has conveyed no right, title, or interest in the Invention to any party other than the Assignee; and at the time of signing of this Assignment, he neither knows nor has reason to know of any outstanding claims, title, or interests against his interest in the Invention which are contrary to this assignment.

2. The Assignor, for good and valuable consideration, hereby sells, grants, transfers, and assigns to the Assignee its entire and exclusive right, title, and interest in and to the Invention. Such assignment includes, but is not limited to: all worldwide rights to make, use, and sell the Invention, and to file for foreign patents based upon the Invention, the entire right, title and interest in and to any improvements, divisions, substitutions, reissues, extensions, continuations, and continuations-





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IN THE UNITED STATES PATENT AND  
TRADEMARK OFFICE

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In Re the Application of:     George Seidel, Lisa Herickhoff, John Schenk  
Serial Number:                     09/015,454  
Filed:                                 January 29, 1998  
For:                                     System for Improving Yield of Sexed Embryos in Mammals  
Group Art Unit:                     1641  
Examiner:                             Carla Myers

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**ASSIGNMENT RECORDING LETTER OF TRANSMITTAL**

Assistant Commissioner for Patents  
Box Assignment  
Washington, D.C. 20231

Dear Recordation Clerk:

Enclosed for recording are the following documents:

- a.     an Assignment of Lisa Herickhoff and John Schenk with a Recordation Cover Sheet;
- b.     an Assignment of George E. Seidel with a Recordation Cover Sheet;
- c.     a firm check in the amount of \$80.00 in payment of each recordation fee;
- d.     First Class Mail Certificates for each document; and
- e.     this Letter of Transmittal.

Please confirm receipt of the documents by applying your date stamp to the enclosed postcard and returning it to us.

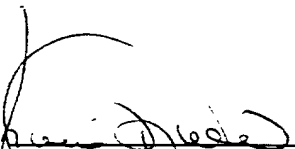
I have this 26 day of September, 2000, either myself personally or through my direction of staff at this office, deposited all of the items in the above letter of transmittal with the United States Postal Service as First Class Mail, postage prepaid, in an envelope addressed to: Box Assignment, Assistant Commissioner for Patents, Washington, D.C. 20231.

**Please address all future correspondence to: Santangelo Law Offices, P.C., 125 South Howes, Third Floor, Fort Collins, CO 80521.**

Dated this 26 day of September, 2000.

Respectfully Submitted,

SANTANGELO Law Offices, P.C.

A handwritten signature in dark ink, appearing to read "Craig R. Miles", is written over a horizontal line.

Craig R. Miles  
ATTORNEY FOR APPLICANT  
PTO No. 45,954  
125 South Howes, Third Floor  
Fort Collins, Colorado 80522  
(970) 224-3100

Express Mail No.: EM001094928US

Attorney Docket: XY-Super

**IN THE UNITED STATES PATENT AND  
TRADEMARK OFFICE**

In Re the Application of: George Seidel, Lisa Herickhoff, John Schenk  
Serial Number: 09/015,454  
Filed: January 29, 1998  
For: System for Improving Yield of Sexed Embryos in Mammals  
Group Art Unit: 1641  
Examiner: Carla Myers  
Assignee: XY, Inc.

**ASSIGNMENT OF PATENT RIGHTS**

THIS ASSIGNMENT document is executed the 29<sup>th</sup> day of January, 1998, between and among John Schenk, individually, whose address is: 1906 Constitution, Fort Collins, CO 80526 and Lisa Herickhoff, individually, whose address is: 5123 E. County Road 52, Fort Collins, CO 80524 (each an "Assignor" and collectively "Assignors") and XY, Inc., a Colorado corporation having its principal office at 400 East Horsetooth Road, Fort Collins, CO 80525 (the "Assignee").

WHEREAS a United States Patent Application has been made for an Invention currently entitled "Improved Sheath Fluids and Collection Systems for Sex-Specific Cytometer Sorting of Sperm" (the "Invention" which includes for the purpose of this assignment all improvements and subsequent continuations and applications on this technology);

WHEREAS each Assignor, either by his/herself or in conjunction with other individuals, may be an inventor of this Invention;

WHEREAS each Assignor acknowledges his/her obligation to assign all right, title and interest in the Invention to Assignee; and

WHEREAS each Assignor desires to formalize his/her obligation for assignment of all right, title and interest to the Invention to Assignee to the extent he/she has any such rights worldwide;

NOW, THEREFORE, the parties hereby agree as follows:

1. Each Assignor warrants that:

- a. he/she has the authority to assign all right, title and interest originated now or hereafter by him/her involving the Invention,
- b. he/she has conveyed no right, title, or interest in the Invention to any party other than the Assignee, and
- c. at the time of signing of this Assignment, he/she neither knows nor has reason to know of any outstanding right, title, or interest in the Invention inconsistent with a full assignment of rights to the Assignee other than any right, title, or interest which may exist as a result of any coinventorship by another person.

2. Each Assignor, for good and valuable consideration, hereby sells, grants, transfers, and assigns to the Assignee the entire right, title, and interest in and to the Invention, including all improvements, changes, or other developments developed now or hereafter which are related to the subject matter of the Invention to the extent any such rights originate during his/her employment by the Assignor and originate with or from him/her or are ownable by him/her (whether independently or in combination with others), including, but not limited to:

- a. all such worldwide rights to make, use, and sell the Invention, and to file for United States or foreign patents based upon the Invention,
- b. the entire right, title and interest in and to any improvements, divisionals, substitutions, continuations and continuations-in-part thereof, all patents which may be granted thereon, and all reissues and extensions thereof,
- c. all related rights in any country such as utility-model registrations, inventor's certificates and the like, and all right, title, and interest under any foreign government, and
- d. all rights to any documents, notes, and evidence regarding any aspect of the Invention.

3. Each Assignor covenants that he/she will not execute any agreement in conflict with this Assignment and will not take or assist in taking any actions which might tend to diminish the scope of protection available to the Assignee for the Invention. Each Assignor covenants that he/she will promptly and continuously inform the Assignee of any articles, patents, or other references or prior art of which he/she becomes aware which may be material to the assessment of patentability of the Invention.

4. Each Assignor further covenants and agrees that he/she will communicate to Assignee any facts known to him/her respecting any improvements on the Invention, and will testify in any legal proceeding, sign all lawful papers, execute all divisional, continuation, continuation-in-part, substitute, foreign, and reissue applications, make all rightful oaths, and generally do everything possible to aid

Assignee to obtain and enforce full protection and title in and to said Invention and related improvements in all countries without further consideration but at the expense of the Assignee.

5. Each Assignor grants the firm of Santangelo Law Offices, P.C., the power to insert on this Assignment any further identification which may be necessary or desirable in order to comply with the rules of the United States Patent Office or any foreign patent office for recordation of this document.

6. This assignment shall be binding on all parties, their heirs, executors, administrators, successors, and/or assigns, and may be recorded in the United States Patent and Trademark Office. In the event any provision of this Agreement is found to be unenforceable or to be unreasonable in scope, such provision shall be modified to the extent necessary to make it enforceable, and as so modified, this Agreement shall remain in full force and effect.

Date: 29 Jan 98

John L. Schenk  
John Schenk

Date: 29 Jan 1998

Lisa A. Herickhoff  
Lisa Herickhoff

UNITED STATES OF AMERICA )  
STATE OF COLORADO )ss.  
COUNTY OF LARIMER )

SUBSCRIBED AND SWORN to before me in the County of Larimer, State of Colorado, United States of America, by John Schenk, this 29 day of January, 1998.  
WITNESS my hand and official seal pursuant to the authority vested in me as a Notary Public by the State of Colorado.

Barbara L. Brown  
Notary Public  
My Commission Expires: 7-6-99

UNITED STATES OF AMERICA )  
STATE OF Colorado )ss.  
COUNTY OF Larimer )

SUBSCRIBED AND SWORN to before me in the County of Larimer, State of Colorado, United States of America, by Lisa Herickhoff, this 29 day of January, 1998.  
WITNESS my hand and official seal pursuant to the authority vested in me as a Notary Public by the State of \_\_\_\_\_.

Barbara L. Brown  
Notary Public  
My Commission Expires: 7-6-99

IN THE UNITED STATES PATENT AND  
TRADEMARK OFFICE

In Re the Application of: George Seidel, Lisa Herickhoff, John Schenk

Serial Number:

Filed:

For: System for Improving Yield of Sexed Embryos in Mammals

Group Art Unit:

Examiner:

Assignee:

POWER OF ATTORNEY

I, Nigel M. Ferrey, as President of XY, Inc., hereby appoint Santangelo Law Offices, P.C., whose mailing address is 315 West Oak Street, Suite 701, Fort Collins, Colorado 80521, including Luke Santangelo, whose registration number before the United States Patent and Trademark Office is 31,997, William F. Vobach, whose registration number before the United States Patent and Trademark Office is 39,411, and Brit Nelson, whose registration number before the United States Patent and Trademark Office is 40,370 as XY, Inc.'s attorneys/agents to prosecute this application entitled "System for Improving Yield of Sexed Embryos in Mammals" and to transact all business in the Patent Office connected therewith.

Date: 1/29/98

By: 

Nigel M. Ferrey, President  
XY, Inc.